MONITORING PERIOD:

SUBMISSION ID: 1124627 Emerald BioEnergy FACILITY: LOCATION: 2881 Co Rd 156 **STATION CODE:**

Cardington, OH 43315

REPORTING LAB: COUNTY: Morrow DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR:

STATUS: PERMIT NUMBER: Revision 4IN00204*BD

581

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PARAMETER	рН	Ammonia (NH3) In Sludge	Nitrogen Kjeldahl, Total In Sludge	Phosphorus, Total in Sludge	Potassium In Sludge	Arsenic, Tot In Sludge	Cadmium, Total In Sludge
PARAMETER CODE	00400	00611	00627	00668	00938	01003	01028
UNITS	S.U.	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
FREQUENCY	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month
SAMPLING	Composite	Composite	Composite	Composite	Composite	Composite	Composite
TYPE 2021-12-01		<u> </u>					
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Page 1

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:581

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

PARAMETER	Copper, Total In Sludge	Lead, Total In Sludge	Nickel, Total In Sludge	Zinc, Total In Sludge	Selenium, Total In Sludge	Sludge Fe Weight	e Sludge Weight
PARAMETER CODE	01043	01052	01068	01093	01148	51129	70316
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	dry tons	Dry Tons
FREQUENCY	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month
SAMPLING TYPE	Composite	Composite	Composite	Composite	Composite	Total	Total
2021-12-01							
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Page 2

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:581

Cardington, OH 43315 MONITORING PERIOD :

Cardington, OH 43315

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

		NO DISCHARGE INDICATOR: AL										
PARAMETER	Mercury, Total In Sludge	Molybdenum in Sludge										
PARAMETER CODE	71921	78465										
UNITS	mg/kg	mg/kg										
FREQUENCY	1/Month	1/Month										
SAMPLING												
TYPE	Composite	Composite										
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Page 3

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:582

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

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PARAMETER	рН		Ammonia (NH3) In Sludge	Nitrogen Kjeldahl, Total In Sludge	Phosphorus, Total in Sludge	Potassium In Sludge	Arsenic, To In Sludge	
PARAMETER CODE	0040	10	00611	00627	00668	00938	01003	01028
UNITS	S.U		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
FREQUENCY	1/Mor	***********	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month
SAMPLING TYPE	Compo		Composite	Composite	Composite	Composite	Composit	
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Page 4

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:582

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

			N	O DISCHARGE I	NDICATOR:	AL	
PARAMETER	Copper, Total Sludge	In Lead, Total In Sludge	Nickel, Total In Sludge	Zinc, Total In Sludge	Selenium, Total In Sludge	Sludge Fe Weight	e Sludge Weight
PARAMETER CODE	01043	01052	01068	01093	01148	51129	70316
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	dry tons	Dry Tons
FREQUENCY	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month
SAMPLING TYPE	Composite	Composite	Composite	Composite	Composite	Total	Total
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Page 5

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:582

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

				DISCHARGE II		AL	
PARAMETER	Mercury, Total In Sludge	Molybdenum In Sludge					
PARAMETER CODE	71921	78465					
UNITS	mg/kg	mg/kg					
FREQUENCY	1/Month	1/Month					
SAMPLING	Composite	Composite					
TYPE							
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Page 6

SUBMISSION ID: 1124627 STATUS: Revision FACILITY: LOCATION: Emerald BioEnergy 2881 Co Rd 156 PERMIT NUMBER: STATION CODE: MONITORING PERIOD: 4IN00204*BD

Cardington, OH 43315

COUNTY: Morrow **REPORTING LAB:** Renergy CDO DISTRICT: ANALYST: Jeff Williamson

			NO	DISCHARGE II	NDICATOR:		
PARAMETER	Sludge Fee Weight	T					
PARAMETER CODE	51129						
UNITS	dry tons						
FREQUENCY	1/Year						
SAMPLING TYPE	Total						
2021-12-01	526.39						
2021-12-02	320,33	†					
2021-12-03		1					
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Page 7

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:588

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:RenergyDISTRICT:CDOANALYST:Jeff Williamson

NO DISCHARGE INDICATOR:

			NO	DISCHARGE II	NDICATOR:		
PARAMETER	Sludge Weight						
PARAMETER CODE	70316						
UNITS	Dry Tons						
FREQUENCY	1/Year						
SAMPLING TYPE	Total						
2021-12-01	526.39						
2021-12-02							
2021-12-03							
2021-12-04							
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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:589

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

				14	O DISCHARGE II	IDICATOR.	AL	
PARAMETER	рН		ia (NH3) udge	Nitrogen Kjeldahl, Total In Sludge	Phosphorus, Total in Sludge	Potassium In Sludge	Arsenic, To In Sludge	
PARAMETER CODE	00400	00	611	00627	00668	00938	01003	01028
UNITS	S.U.	mo	/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
FREQUENCY	When Dis	:0000000000000000000000000000000000000	Disch.	When Disch.	When Disch.	When Disch.	When Disc	oee6000000ff0000000000000000000ff0000000ff0000
SAMPLING TYPE	Composi		osite	Composite	Composite	Composite	Composite	
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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:589

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB: DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

PARAMETER	Copper, Total II Sludge	Lead, Total In Sludge	Nickel, Total In Sludge	Zinc, Total In Sludge	Selenium, Total In Sludge	Free Liquids Sludge	, In Fecal Coliform in Sludge
PARAMETER CODE	01043	01052	01068	01093	01148	04174	31641
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Pass = 0 Fai	I = MPN/G
FREQUENCY	When Disch.	When Disch.	When Disch.	When Disch.	When Disch.	When Disc	n. When Disch.
SAMPLING TYPE	Composite	Composite	Composite	Composite	Composite	Composite	Multiple Grab
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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:589

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

			IN	O DISCHARGE II	NDICATOR:	AL	
PARAMETER	Sludge Fee Weight	Sludge Weight	Sludge Solids, Percent Total	Mercury, Total In Sludge	Molybdenum In Sludge	to regiona	me, Sludge Weight, it to regional ity storage facility
PARAMETER CODE	51129	70316	70318	71921	78465	99973	99974
UNITS	dry tons	Dry Tons	%	mg/kg	mg/kg	gals	dry tons
FREQUENCY	When Disch.	When Disch.	When Disch.	When Disch.	When Disch.	When Disc	
SAMPLING	Tabal	Total	C	C	C	Tatal	Takal
TYPE	Total	Total	Composite	Composite	Composite	Total	Total
2021-12-01							
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2021-12-03							
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2021-12-05							
2021-12-06 2021-12-07							
2021-12-07			-				
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2021-12-11							
2021-12-12							
2021-12-13		1					
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	[DOSS]	bility of fine and	иприsonment.				

Page 11

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:589

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

PARAMETER	Sludge Volume, to approved beneficial use sites	Sludge Weight, to approved beneficial use sites	Foreign Matter, percent				
PARAMETER CODE	99975	99976	99979				
UNITS	gals	dry tons	%				
FREQUENCY	When Disch.	When Disch.	When Disch.				
SAMPLING	Total	Total	Composite				
TYPE	iviai	IUIAI	Composite				
2021-12-01							
2021-12-02							
2021-12-03							
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Page 12

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:601

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

PARAMETER	Hydraulic Loading Rate (HLR)	Sludge Solids, Percent Total	Sludge Solids, Percent Volatile	COD, Soluble	Organic Loading Rate (OLR)		
PARAMETER CODE	51028	70318	70322	80116	99981		
UNITS	GPD	%	%	mg/l	lb/cf/day		
FREQUENCY	1/Week	1/Week	1/Week	1/Week	1/Week		
SAMPLING TYPE	Continuous	Composite	Composite	Composite	Continuous		
2021-12-01							
2021-12-02							
2021-12-03							
2021-12-04	***************************************						
2021-12-05							
2021-12-06		_					
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Maximum	000000000000000000000000000000000000000			***************************************		000000000000000000000000000000000000000	
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Page 13

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:602

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:energyDISTRICT:CDOANALYST:Jeremy Kanaird

NO DISCHARGE INDICATOR:

PARAMETER	Temperature, In	Hq	Alkalinity, Total	Volatile Fatty	Detention Time,		
PARAMETER	Sludge		(CaCO3)	Acids (VFA)	days		
CODE	99978	00400	00410	99980	72026		
UNITS	F	S.U.	mg/l	mg/l	days		
FREQUENCY	1/Day	3/Week	3/Week	3/Week	1/Week		
SAMPLING TYPE	Continuous	Composite	Composite	Composite	Continuous		
2021-12-01	100	7.569	4893	584	31		
2021-12-02	99						
2021-12-03	98	7.542	5049	484			
2021-12-04	98	7 475	-				
2021-12-05 2021-12-06	98 98	7.475	E011	E04			
2021-12-06	98		5011	504			
2021-12-07	97	7.114	4152	789	31		
2021-12-09	96	/,117	7152	703			
2021-12-10	98	7.205					
2021-12-11	98	7,000					
2021-12-12	98	7.469					
2021-12-13	98		5230	1709			
2021-12-14	98		3891	504			
2021-12-15	98	7.183			31		
2021-12-16	98			***************************************			
2021-12-17	98	7.401	4304	1468			
2021-12-18	98			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
2021-12-19	98						
2021-12-20	98	7.366	5297	1993			
2021-12-21	98		5845	1797			
2021-12-22	98	7.414			31		
2021-12-23 2021-12-24	98 98	7.420	6700	2146			
2021-12-24	98	7.420	6798	2146			
2021-12-25	98		5741	2014			
2021-12-27	98	7.518	5646	1903			
2021-12-28	98	7,020		2000			
2021-12-29	99	7.551	5655	1344	31		
2021-12-30	98	7.554	5376	1769			
2021-12-31	98						
Minimum		7.114	3891.0	484.0	96.0		
Maximum		7.569	6798.0	2146.0	100.0		
Average			5206.28571	1357.71429	98.03226		
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Page 14

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:603

Cardington, OH 43315 MONITORING PERIOD :

COUNTY: Morrow REPORTING LAB:
DISTRICT: CDO ANALYST:

NO DISCHARGE INDICATOR: AL

			••	O DISCHARGE II		AL	
PARAMETER	Solids, Total Volatile	Sludge Solids, Percent Volatile	COD, Soluble	Oil and Grease, Hexane Extr Method	Foreign Matter, percent		
PARAMETER CODE	00157	70322	80116	00552	99979		
UNITS	% Removed	%	mg/l	mg/l	%		
FREQUENCY	1/Week	1/Week	1/Week	1/Month	1/Month		
SAMPLING TYPE	Calculated	Composite	Composite	Composite	Composite		
2021-12-01							
2021-12-02							
2021-12-03							
2021-12-04							
2021-12-05							
2021-12-06							
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2021-12-26		-		<u> </u>			
2021-12-27		-		 			
2021-12-28		-		 			
2021-12-29	***************************************						
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2021-12-31							
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Maximum						000000000000000000000000000000000000000	
Average	000000000000000000000000000000000000000					000000000000000000000000000000000000000	
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Page 15

SUBMISSION ID:1124627STATUS:FACILITY:Emerald BioEnergyPERMIT NUMBER:LOCATION:2881 Co Rd 156STATION CODE:

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:RenergyDISTRICT:CDOANALYST:Josh Ropke

NO DISCHARGE INDICATOR:

Revision

4IN00204*BD

			N	O DISCHARGE II	NDICATOR:		
PARAMETER	Freeboard	Maximum Operating Level (MOL), Sludge					
PARAMETER CODE	82564	99977					
UNITS	feet	mgals					
FREQUENCY	1/Week	1/Week					
SAMPLING	T-4-1						
TYPE	Total	Total					
2021-12-01							
2021-12-02	5.48507	3.52100					
2021-12-03 2021-12-04		-					
2021-12-04							
2021-12-06							
2021-12-07							
2021-12-08							
2021-12-09	5.48507	3.52100					
2021-12-10		-					
2021-12-11 2021-12-12							
2021-12-12		1					
2021-12-14		1					
2021-12-15		1					
2021-12-16	5.48507	3.52100					
2021-12-17	***************************************			*******************************			
2021-12-18	***************************************	-					
2021-12-19		-					
2021-12-20		-					
2021-12-21 2021-12-22							
2021-12-23	5.48507	3.52100					
2021-12-24	3140307	1 3,322,00					
2021-12-25							
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2021-12-27	***************************************			***************************************			
2021-12-28							
2021-12-29	5.48507	3.52100					
2021-12-30 2021-12-31		-					
	5.48507	 					
Minimum Maximum	5.48507 5.48507						
Average	5.48507						
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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:605

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:RenergyDISTRICT:CDOANALYST:Josh Ropke

NO DISCHARGE INDICATOR:

			N	D DISCHARGE II	NDICATOR:		
PARAMETER	Freeboard	Maximum Operating Level (MOL), Sludge					
PARAMETER CODE	82564	99977					
UNITS	feet	mgals					
FREQUENCY	1/Week	1/Week					
SAMPLING TYPE	Total	Total					
2021-12-01							
2021-12-02	.38769	.14500					
2021-12-03							
2021-12-04							
2021-12-05		-					
2021-12-06		-					
2021-12-07 2021-12-08		-		***************************************			
2021-12-08	.38769	.14500		***************************************		••••••	
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2021-12-11							
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2021-12-15							
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2021-12-20		<u> </u>					
2021-12-22							
2021-12-23	.38769	.14500					
2021-12-24							
2021-12-25							
2021-12-26							
2021-12-27							
2021-12-28							
2021-12-29							
2021-12-30	.38769	.14500					
2021-12-31		.					
Minimum	0.38769	.					
Maximum	0.38769 0.38769						
Average Count	5			***************************************		000000000000000000000000000000000000000	000000000000000000000000000000000000000
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Page 17

SUBMISSION ID: 1124627 FACILITY: LOCATION: Emerald BioEnergy 2881 Co Rd 156

Cardington, OH 43315

COUNTY: Morrow DISTRICT: CDO

STATUS: PERMIT NUMBER: STATION CODE: MONITORING PERIOD: Revision 4IN00204*BD

2021-12-01 To: 2021-12-31

Renergy Josh Ropke

NO DISCHARGE INDICATOR:

REPORTING LAB:

ANALYST:

			N	D DISCHARGE II	NDICATOR:		
PARAMETER	Freeboard	Maximum Operating Level (MOL), Sludge					
PARAMETER CODE	82564	99977					
UNITS	feet	mgals					
FREQUENCY	1/Week	1/Week					
SAMPLING TYPE	Total	Total					
2021-12-01							
2021-12-02	.33176	.28500					
2021-12-03							
2021-12-04							
2021-12-05							
2021-12-06		-					
2021-12-07		-					
2021-12-08 2021-12-09	.33176	.28500		***************************************			
2021-12-09	.331/0	.20300					
2021-12-10							
2021-12-12							
2021-12-13							
2021-12-14		-					
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2021-12-16	.33176	.28500		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	***************************************		
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2021-12-21 2021-12-22							
2021-12-22	.33176	.28500					
2021-12-24	1331/0	120300					
2021-12-25							
2021-12-26							
2021-12-27							
2021-12-28							
2021-12-29							
2021-12-30	.33176	.28500					
2021-12-31							
Minimum	0.33176			***************************************			
Maximum	0.33176						
Average	0.33176			***************************************	***************************************	000000000000000000000000000000000000000	
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SUBMISSION ID: 1124627 STATUS: FACILITY: Emerald BioEnergy PERMIT NUMBER: LOCATION: 2881 Co Rd 156 STATION CODE:

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:RenergyDISTRICT:CDOANALYST:Josh Ropke

NO DISCHARGE INDICATOR:

Revision

4IN00204*BD

			N	D DISCHARGE II	NDICATOR:		
PARAMETER	Freeboard	Maximum Operating Level (MOL), Sludge					
PARAMETER CODE	82564	99977					
UNITS	feet	mgals					
FREQUENCY	1/Week	1/Week					
SAMPLING		1					
TYPE	Total	Total					
2021-12-01							
2021-12-02	2.85714	2.81000					
2021-12-03		-					
2021-12-04 2021-12-05		8					
2021-12-06		-					
2021-12-07		-					
2021-12-08							
2021-12-09	2.85714	2.81000					
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2021-12-12							
2021-12-13							
2021-12-14 2021-12-15							
2021-12-15	2.85714	2.81000					
2021-12-17	2.00724	1 2.02000					
2021-12-18	***************************************	***************************************	***************************************			***************************************	
2021-12-19	***************************************	8		***************************************			***************************************
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2021-12-21							
2021-12-22							
2021-12-23	2.85714	2.81000					
2021-12-24		<u></u>					
2021-12-25 2021-12-26		1					
2021-12-20		·					
2021-12-28	***************************************	- }		***************************************			
2021-12-29		•					
2021-12-30	2.85714	2.81000					
2021-12-31							
Minimum	2.85714						
Maximum	2.85714						
Average	2.85714		500000000000000000000000000000000000000	***************************************		800000000000000000000000000000000000000	
Count	5						
Name of Resp Official or Aut Representa	horized _{have p} itive _{familia}	fy under the per personally exam ar with the infor tted herein and	rmation	I Signature o Author	f Responsible (ized Represent		Submission Date/Time
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Page 19

 SUBMISSION ID:
 1124627
 ST.

 FACILITY:
 Emerald BioEnergy
 PE

 LOCATION:
 2881 Co Rd 156
 ST.

Cardington, OH 43315

COUNTY: Morrow DISTRICT: CDO

STATUS: PERMIT NUMBER: STATION CODE: MONITORING PERIOD:

REPORTING LAB:

ANALYST:

Revision 4IN00204*BD

608

2021-12-01 To: 2021-12-31

Renergy Josh Ropke

NO DISCHARGE INDICATOR:

			N	D DISCHARGE II	NDICATOR:		
PARAMETER	Freeboard	Maximum Operating Level (MOL), Sludge					
PARAMETER CODE	82564	99977					
UNITS	feet	mgals					
FREQUENCY	1/Week	1/Week					
SAMPLING TYPE	Total	Total					
2021-12-01		1					
2021-12-02	1.36200	1.36500					
2021-12-03							
2021-12-04							
2021-12-05		8					
2021-12-06 2021-12-07		-					
2021-12-07		-					
2021-12-09	1.36200	1.36500		***************************************			
2021-12-10							
2021-12-11							
2021-12-12							
2021-12-13							
2021-12-14							
2021-12-15 2021-12-16	1.36200	1.36500					
2021-12-16	1.30200	1.30300					
2021-12-18	***************************************	-		***************************************			
2021-12-19							
2021-12-20							
2021-12-21							
2021-12-22							
2021-12-23	1.36200	1.36500					
2021-12-24							
2021-12-25 2021-12-26		-					
2021-12-27		-					
2021-12-28				***************************************			
2021-12-29				***************************************			
2021-12-30	1.36200	1.36500					
2021-12-31							
Minimum	1.362						
Maximum	1.362			***************************************			
Average	1.362			5550000150000015000001100000110000011000001100		000000000000000000000000000000000000000	
Count	5						
Name of Respo	onsible [] certi	fy under the per	nalty of law that	I Signature o	f Responsible		Submission
Official or Auth	. #10.00	personally exam		Author	ized Represent	ative	Date/Time
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	inquir	y of those indiv	iduals				
			ble for obtaining	,			Certification
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Williams		mplete. I am aw					2022-02-
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		nformation, incl					
	possib	oility of fine and	<u>imprisonment.</u>				***************************************

Page 20

SUBMISSION ID: 1124627 STATUS: Revision FACILITY: LOCATION: Emerald BioEnergy 2881 Co Rd 156 PERMIT NUMBER: STATION CODE: 4IN00204*BD

MONITORING PERIOD: Cardington, OH 43315

COUNTY: Morrow **REPORTING LAB:** Renergy DISTRICT: CDO ANALYST: Josh Ropke

			N	D DISCHARGE II	NDICATOR:		
PARAMETER	Freeboard	Maximum Operating Level (MOL), Sludge					
PARAMETER CODE	82564	99977					
UNITS	feet	mgals					
FREQUENCY	1/Week	1/Week					
SAMPLING TYPE	Total	Total					
2021-12-01	***************************************						
2021-12-02	20.76969	24.02000					
2021-12-03							
2021-12-04							
2021-12-05							
2021-12-06							
2021-12-07				***************************************			
2021-12-08 2021-12-09	20.76969	24.02000		***************************************			
2021-12-09	20.70909	24.02000					
2021-12-11							
2021-12-12		<u> </u>					
2021-12-13							
2021-12-14							
2021-12-15							
2021-12-16	20.76969	24.02000		***************************************			
2021-12-17				***************************************			
2021-12-18				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
2021-12-19		<u> </u>					
2021-12-20 2021-12-21							
2021-12-21							
2021-12-23	20.76969	24.02000					
2021-12-24	20.70303	1 24.02000					
2021-12-25							
2021-12-26		•					
2021-12-27							
2021-12-28							
2021-12-29							
2021-12-30	20.76969	24.02000					
2021-12-31							
Minimum	20.76969			***************************************			
Maximum	20.76969						
Average	20.76969		000000000000000000000000000000000000000	***************************************	300000000000000000000000000000000000000	000000000000000000000000000000000000000	30000000000
Count	5						
Name of Respo Official or Auth Representa	norized _{have p} tive _{familia}	fy under the per personally exam ar with the infor tted herein and	mation	Signature o	f Responsible (ized Represent		Submission Date/Time
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Page 21

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:701

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrooksideDISTRICT:CDOANALYST:Cheryl Rex

NO DISCHARGE INDICATOR:

				DISCHARGE II			
PARAMETER	Water Temperature	Turbidity	Conductivity	pН	Nitrogen, Ammonia (NH3)	Nitrogen, Nitrite (NO2	
PARAMETER CODE	00011	00070	00094	00400	00610	00615	00620
UNITS	F	J.U.	Umho/Cm	S.U.	mg/l	mg/l	mg/l
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year
SAMPLING							
TYPE	Grab	Grab	Grab	Grab	Grab	Grab	Grab
2021-12-01	52	166.4	1330	7.84	.165	11.795	AA5.0
2021-12-02							
2021-12-03							
2021-12-04		***************************************					
2021-12-05							
2021-12-06						 	
2021-12-07						-	
2021-12-08			-			_	
2021-12-09			- 			-	
2021-12-10 2021-12-11			-			†	
2021-12-11			-			-	
2021-12-12						-	
2021-12-14						†	
2021-12-15						1	
2021-12-16						1	
2021-12-17							
2021-12-18							
2021-12-19							
2021-12-20		***************************************				.	
2021-12-21							
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2021-12-24			-			-	
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2021-12-26			 				
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2021-12-29			-			-	
2021-12-30	***************************************					-	
2021-12-31	***************************************	annesannesannesannesannesannesa		***************************************			***************************************
Minimum	52.0	166.4	1330.0	7.84	0.165	11.795	0.0
Maximum	52.0	166.4	1330.0	7.84	0.165	11.795	0.0
Average	52	166.4	1330	000000000000000000000000000000000000000	0.165	11.795	0
Count	1	1	1	<u>1</u>	1	1	1
		runder the ne	nalty of law that I	Signaturo	f Responsible		Submission
Official or Aut Representa	horized have pe tive familia	y under the peersonally exan r with the info ted herein and	nined and am rmation		ized Represen		Date/Time
Jeffre William	immed the info submit and cor are sign false in	ormation, I belted information inplete. I am an inificant penalt formation, inc	ible for obtaining ieve the n is true, accurate ware that there ies for submitting				Certification Version Date 2022-02- 27 09:02

Page 22

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:701

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrooksideDISTRICT:CDOANALYST:Cheryl Rex

NO DISCHARGE INDICATOR:

PARAMETER	Nitrogen Kjeldahl, Total	Phosphorus, Total (P)	Sodium, Total (Na)	Potassium, Total (K)	Chloride, Total	Sulfate, (SC	D4) E. coli
PARAMETER CODE	00625	00665	00929	00937	00940	00945	31648
UNITS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	#/100 ml
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year
SAMPLING				e 1			
TYPE	Grab	Grab	Grab	Grab	Grab	Grab	Grab
2021-12-01	.86	AA5.0	24.68	2.197	122.6	38.894	3.1
2021-12-02			-				
2021-12-03							
2021-12-04						 	
2021-12-05						 	
2021-12-06			}			 	
2021-12-07 2021-12-08				***************************************			
2021-12-09			 			 	
2021-12-10			 			 	
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2021-12-17							***************************************
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2021-12-26						 	
2021-12-27							
2021-12-28							
2021-12-29			-				
2021-12-30 2021-12-31					-		
Minimum	0.86	0.0	24.68	2.197	122.6	38.894	3.1
Maximum	0.86	0.0	24.68	2.197	122.6	38.894	3.1
Average	0.86	0	24.68	2.197	122.6	38.894	3.1
Count	1	1	1	1	1	1	1
Name of Resp	onsible I certif have p	y under the per	nalty of law that I	Signature	of Responsible rized Represent	Official or	Submission Date/Time
Representa	ative familia	ersonany exam r with the infor	metion	Autilo			
	grummu	ted herein and					
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		of those indiv					
			ble for obtaining				Certification
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		nformation, incl					£1 UJ:U£
	possibi	lity of fine and	imprisonment.	8			

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Revision 4IN00204*BD SUBMISSION ID: 1124627 STATUS: FACILITY: LOCATION: Emerald BioEnergy 2881 Co Rd 156 PERMIT NUMBER: STATION CODE: MONITORING PERIOD:

Cardington, OH 43315

COUNTY: Morrow **REPORTING LAB:** Brookside CDO DISTRICT: ANALYST: Cheryl Rex

			NO	DISCHARGE II	NDICATOR:		
PARAMETER	Residue, Total Filterable						
PARAMETER CODE	70300						
UNITS	mg/l						
FREQUENCY	2/Year						
SAMPLING	Cuale						
TYPE	Grab						
2021-12-01	640						
2021-12-02							
2021-12-03							
2021-12-04							
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2021-12-06 2021-12-07							
2021-12-07							
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2021-12-27	***************************************	***************************************	II	***************************************	***************************************		***************************************
2021-12-28				***************************************			***************************************
2021-12-29							
2021-12-30							
2021-12-31							
Minimum	640.0						
Maximum	640.0						
Average	640						
Count	1	***************************************			***************************************		
Name of Resp Official or Aut Representa	horized _{have} p stive _{familia}	y under the per ersonally exam r with the infor ted herein and	rmation		f Responsible ized Represent		Submission Date/Time
Jeffre William	inquiry immed the inf submit and co are sig false in	of those indiviately responsi- ormation, I belited information mplete. I am awnificant penaltinformation, incl	iduals ble for obtaining eve the is true, accurate vare that there es for submitting				Certification Version Date 2022-02- 27 09:02

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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:702

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrooksideDISTRICT:CDOANALYST:Erica Huber

NO DISCHARGE INDICATOR:

			140	DISCHARGE	MDICATOR.		
PARAMETER	Water Temperature	Turbidity	Conductivity	рН	Nitrogen, Ammonia (NH3)	Nitrogen, Nitrite (NO	
PARAMETER CODE	00011	00070	00094	00400	00610	00615	00620
UNITS	F	J.U.	Umho/Cm	S.U.	mg/l	mg/l	mg/l
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year
SAMPLING TYPE	Grab	Grab	Grab	Grab	Grab	Grab	Grab
2021-12-01	55	152.5	1322	7.68	.162	9.204	AA5.0
2021-12-02		***************************************					
2021-12-03							
2021-12-04						-	
2021-12-05							
2021-12-06 2021-12-07					-	 	
2021-12-07			-			 	
2021-12-08						†	
2021-12-10						1	
2021-12-11			1			1	
2021-12-12				***************************************			
2021-12-13		***************************************				1	
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2021-12-15							
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2021-12-20	***************************************	***************************************		***************************************		-	
2021-12-21						-	
2021-12-22 2021-12-23						-	
2021-12-23						1	
2021-12-25			-			-	
2021-12-26						1	
2021-12-27							
2021-12-28						†	
2021-12-29							
2021-12-30							
2021-12-31							
Minimum	55.0	152.5	1322.0	7.68	0.162	9.204	0.0
Maximum	55.0	152.5	1322.0	7.68	0.162	9.204	0.0
Average	55	152.5	1322		0.162	9.204	0
Count	1	1	1	1	1	1	1
Name of Resp	onsible I certif	y under the pe	nalty of law that	Signature	of Responsible	Official or	Submission
Official or Aut	horized have pe	ersonally exan	nined and am	Autho	rized Represen	tative	Date/Time
Representa	itive familia	r with the info	ormation				
	submit	ted herein and	l based on my				
	inquiry	of those indi	viduals	800000000000000000000000000000000000000			000000000000000000000000000000000000000
			ible for obtaining				Cautifianti
,	the info	ormation, I be					Certification Version Date
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		formation, inc					27 09:02
			d imprisonment.				

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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:702

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrooksideDISTRICT:CDOANALYST:Erica Huber

NO DISCHARGE INDICATOR:

			NC	DISCHARGE	INDICATOR:		
PARAMETER	Nitrogen Kjeldahl, Total	Phosphorus, Total (P)	Sodium, Total (Na)	Potassium, Total (K)	Chloride, Total	Sulfate, (SO	4) E. coli
PARAMETER CODE	00625	00665	00929	00937	00940	00945	31648
UNITS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	#/100 ml
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year
SAMPLING	Grab	Grab	Grab	Grab	Grab	Grab	Grab
TYPE		Gian	Grau	Grau	Grau	Gran	Glau
2021-12-01	4.72	.207	25.47	2.019	96.647	30.345	25.47
2021-12-02		↓	ļ				
2021-12-03		<u> </u>					
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2021-12-29							
2021-12-30							
2021-12-31							
Minimum	4.72	0.207	25.47	2.019	96.647	30.345	25.47
Maximum	4.72	0.207	25.47	2.019	96.647	30.345	25.47
Average	4.72	0.207	25.47	2.019	96.647	30.345	25.47
Count	1	1	1	1	1	1	1
Name of Resp	onsible I cert	fy under the per	nalty of law that	I Signature	of Responsible	Official or	Submission
Official or Aut	:horized have	personally exam	ined and am	Autho	rized Represent	ative	Date/Time
Represent		ar with the info					
		tted herein and					
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			ble for obtaining				oid
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William			es for submitting	ī			
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		oility of fine and					
		ATTEC AT TITLE CITION	. migrisomment,		***************************************		***************************************

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SUBMISSION ID: 1124627 STATUS: Revision FACILITY: LOCATION: Emerald BioEnergy 2881 Co Rd 156 PERMIT NUMBER: STATION CODE: MONITORING PERIOD: 4IN00204*BD

Cardington, OH 43315

COUNTY: Morrow **REPORTING LAB:** Brookside CDO DISTRICT: ANALYST: Erica Huber

			NO	DISCHARGE II	NDICATOR:		
PARAMETER	Residue, Total Filterable						
PARAMETER CODE	70300						
UNITS	mg/l						
FREQUENCY	2/Year						
SAMPLING	Cuale						
TYPE	Grab						
2021-12-01	680						
2021-12-02							
2021-12-03							
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2021-12-05			 			 	
2021-12-06			 				
2021-12-07	***************************************	***************************************					
2021-12-08 2021-12-09			 	***************************************		 	
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2021-12-26 2021-12-27							
2021-12-27							
2021-12-28							
2021-12-30			 				
2021-12-31			1				
Minimum	680.0						
Maximum	680.0						
Average	680		<u> </u>				
Count	1	000000000000000000000000000000000000000		000000000000000000000000000000000000000	***************************************		000000000000000000000000000000000000000
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Official or Aut	horized have a	y under the per ersonally exam	iaity of law that I inod and am		ized Represent		Date/Time
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		nformation, incl					
	possib	<u>ility of fine and</u>	imprisonment.				

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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:703

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrooksideDISTRICT:CDOANALYST:Erica Huber

NO DISCHARGE INDICATOR:

				DISCHARGE I			
PARAMETER	Water Temperature	Turbidity	Conductivity	рН	Nitrogen, Ammonia (NH3)	Nitrogen, Nitrite (NO2	
PARAMETER CODE	00011	00070	00094	00400	00610	00615	00620
UNITS	F	J.U.	Umho/Cm	S.U.	mg/l	mg/l	mg/l
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year
SAMPLING							
TYPE	Grab	Grab	Grab	Grab	Grab	Grab	Grab
2021-12-01	57	178.2	1339	7.88	.189	11.727	AA5.0
2021-12-02							
2021-12-03							
2021-12-04		***************************************					
2021-12-05							
2021-12-06						 	
2021-12-07						-	
2021-12-08			-				
2021-12-09			- 			-	
2021-12-10 2021-12-11			-			†	
2021-12-11			-			-	
2021-12-13						-	
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2021-12-29			-			-	
2021-12-30	***************************************					-	***************************************
2021-12-31	***************************************	annesannesannesannesannesannesa		***************************************			
Minimum	57.0	178.2	1339.0	7.88	0.189	11.727	0.0
Maximum	57.0	178.2	1339.0	7.88	0.189	11.727	0.0
Average	57	178.2	1339	000000000000000000000000000000000000000	0.189	11,727	0
Count	1	1	1	1	1	1	1
		runder the ne	nalty of law that I	Signaturo	of Responsible	<u> </u>	Submission
Official or Aut Representa	horized have pe tive familia	ersonally exan r with the info ted herein and	nined and am rmation		ized Represen		Date/Time
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Page 28

SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:703

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrooksideDISTRICT:CDOANALYST:Erica Huber

NO DISCHARGE INDICATOR:

PARAMETER	Nitrogen Kjeldahl, Total	Phosphorus, Total (P)	Sodium, Total (Na)	Potassium, Total (K)	Chloride, Total	Sulfate, (SC	94) E. coli
PARAMETER CODE	00625	00665	00929	00937	00940	00945	31648
UNITS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	#/100 ml
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year
SAMPLING TYPE	Grab	Grab	Grab	Grab	Grab	Grab	Grab
2021-12-01	1.1	AA5.0	24.61	1.956	120.926	38.477	1
2021-12-02							
2021-12-03							
2021-12-04							
2021-12-05							
2021-12-06							
2021-12-07		***************************************		***************************************			
2021-12-08							
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2021-12-18							
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2021-12-26							
2021-12-27							
2021-12-28							
2021-12-29							
2021-12-30							
2021-12-31							
Minimum	1.1	0.0	24.61	1.956	120.926	38.477	1.0
Maximum	1.1	0.0	24.61	1.956	120.926	38.477	1.0
Average	1.1	0	24.61	1.956	120.926	38.477	1
Count	1	1	1.	1	1	1	1.
Name of Resp	onsible I certif	v under the per	nalty of law that	Signature	of Responsible	Official or	Submission
Official or Aut	horized have p	ersonally exam	ined and am	Autho	rized Represent	ative	Date/Time
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	for a sid		les for submitting				27 09:02
		nformation, inc					
	possib:	<u>uity of fine and</u>	imprisonment.		************************************		

Page 29

Revision 4IN00204*BD SUBMISSION ID: 1124627 STATUS: FACILITY: LOCATION: Emerald BioEnergy 2881 Co Rd 156 PERMIT NUMBER: STATION CODE: MONITORING PERIOD:

Cardington, OH 43315

COUNTY: Morrow **REPORTING LAB:** Brookside CDO DISTRICT: ANALYST: Erica Huber

			NO	DISCHARGE II	IDICATOR:		
PARAMETER	Residue, Total Filterable						
PARAMETER CODE	70300						
UNITS	mg/l						
FREQUENCY	2/Year						
SAMPLING	Cuale						
TYPE	Grab						
2021-12-01	668						
2021-12-02							
2021-12-03							
2021-12-04			ļ				
2021-12-05			<u> </u>			 	
2021-12-06			-				
2021-12-07 2021-12-08	***************************************						
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2021-12-28							
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2021-12-31			i			i	
Minimum	668.0						
Maximum	668.0						
Average	668						
Count	1			000000000000000000000000000000000000000	000000000000000000000000000000000000000		
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	possib	<u>ility of fine and</u>	imprisonment.				

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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:704

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrookesideDISTRICT:CDOANALYST:Erica Huber

NO DISCHARGE INDICATOR:

PARAMETER	Water Temperature	Turbidity	Conductivity	рН	Nitrogen, Ammonia (NH3)	Nitrogen, Nitrite (NO:		
PARAMETER CODE	00011	00070	00094	00400	00610	00615	00620	
UNITS	F	J.U.	Umho/Cm	S.U.	mg/l	mg/l	mg/l	
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	
SAMPLING TYPE	Grab	Grab	Grab	Grab	Grab	Grab	Grab	
2021-12-01	55	1328	160	7.83	.189	11.532	AA5.0	
2021-12-02								
2021-12-03						<u> </u>		
2021-12-04			-	***************************************				
2021-12-05		<u> </u>	-					
2021-12-06 2021-12-07			- -			-		
2021-12-08		-	 			-		
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2021-12-28		1				1		
2021-12-29								
2021-12-30								
2021-12-31								
Minimum	55.0	1328.0	160.0	7.83	0.189	11.532	0.0	
Maximum	55.0	1328.0	160.0	7.83	0.189	11.532	0.0	
Average	55	1328	160	100000000000000000000000000000000000000	0.189	11.532	O	
Count	1	1	1 1	1	1	1	1	
Name of Resp	onsible I cert	fy under the pe	nalty of law that	Signature (of Responsible	Official or	Submission	
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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:704

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrookesideDISTRICT:CDOANALYST:Erica Huber

NO DISCHARGE INDICATOR:

			NC	DISCHARGE I	NDICATOR:		
PARAMETER	Nitrogen Kjeldahl, Total	Phosphorus, Total (P)	Sodium, Total (Na)	Potassium, Total (K)	Chloride, Total	Sulfate, (SO	4) E. coli
PARAMETER CODE	00625	00665	00929	00937	00940	00945	31648
UNITS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	#/100 ml
FREQUENCY	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year	2/Year
SAMPLING	Grab	Grab	Grab	Grab	Grab	Grab	Grab
TYPE						ļ	
2021-12-01	1.98	AA5.0	24.21	1.981	119.079	37.34	3.1
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2021-12-31							
Minimum	1.98	0.0	24.21	1.981	119.079	37.34	3.1
Maximum	1.98	0.0	24.21	1.981	119.079	37.34	3.1
Average	1.98	0	24.21	1.981	119.079	37.34	3.1
Count	1	1	1	1	1	1	1
Name of Resp	onsible I certif	v under the nei	nalty of law that	Signature	of Responsible	Official or	Submission
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SUBMISSION ID:1124627STATUS:RevisionFACILITY:Emerald BioEnergyPERMIT NUMBER:4IN00204*BDLOCATION:2881 Co Rd 156STATION CODE:704

Cardington, OH 43315 MONITORING PERIOD :

COUNTY:MorrowREPORTING LAB:BrookesideDISTRICT:CDOANALYST:Erica Huber

NO DISCHARGE INDICATOR:

				N	D DISCHARGE II	NDICATOR:		
PARAMETER	Residue Filtera							
PARAMETER CODE	7030	00						
UNITS	mg	/1						
FREQUENCY	2/Ye	ar						
SAMPLING								
TYPE	Gra	D						
2021-12-01	704	1						
2021-12-02								
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Minimum	704				***************************************			
Maximum	704	000000000000000000000000000000000000000						
Average	70	4			500000000000000000000000000000000000000	BECORDO DO COMO DE COMO DO COMO		000000000000000000000000000000000000000
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FACILITY: LOCATION: Emerald BioEnergy 2881 Co Rd 156 PERMIT NUMBER: MONITORING PERIOD: 4IN00204*BD

2021-12-01 To: 2021-12-31

Cardington, OH 43315

GENERAL REPORT COMMENT:

I am currently waiting on the test results to come back from the lab for test 701,702,703 and 704. once the results are received I will update the info.

PARAMETER COMMENTS:

Station Code	Parameter Name	Parameter Code	Date	Unit	Comment
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